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LSI Docket No. 03-0605

JUL 10 2006

Remarks/Arguments

In the Final Office Action mailed on 16 May 2006, the Examiner rejected claims 1-5, and 10 under 35 U.S.C. §103(a) as unpatentable over Yao (United States Patent Publication Number 2003/0084219) in view of Bakke (United States Patent Publication Number 2005/0071532) and further in view of Badamo (United States Patent Publication Number 2002/0181476), and rejected claims 6-9 and 15-16 as unpatentable over Yao in view of Bakke in view of Badamo and further in view of Barrow (United States Patent Publication Number 2002/0188786). The Examiner found claims 11-14 and 17-18 allowable if rewritten appropriately in independent form.

Applicants respectfully traverse the Examiner's rejections under §103 as improperly combining references without any suggestion or motivation to do so in the art. Though Applicants may pursue broader protection in a related continuing application, in hopes of advancing prosecution of this application Applicants have amended claim 1 and claims 17 and 18 to obtain allowance and issuance of this present application. Claims 10, 11, 15, and 16 have been canceled with their respective recitations integrated into other claims. Applicants respectfully request reconsideration and withdrawal of all outstanding objections and rejections.

§103 Claim Rejections

The Examiner rejected claims 1-5 and 10 under 35 U.S.C. §103(a) as unpatentable over Yao in view of Bakke and further in view of Badamo and rejected claims 6-9 and 15-16 under 35 U.S.C. §103(a) as unpatentable over Yao in view of Bakke, further in view of Barrow, and further in view of Badamo. Though Applicants continue to take issue with the Examiner's suggested motivation for the proposed combinations, the Examiner's combinations still fails to teach or reasonably suggest every element of the rejected claim. First and foremost, nothing in the art of record (considered individually or in any combination teaches or reasonably suggests a SAS expander implemented as a Multi-Chip Module ("MCM") - the very essence of the invention. None of the references describe an MCM as the term is understood by those of ordinary skill in the art. This term of art is well understood to describe a single integrated circuit that is

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manufactured to incorporate one or more other integrated circuit dies or components. Such MCM devices are generally fabricated using integrated circuit fabrication techniques - notably distinct from fabrication/assembly of printed circuit board cards and/or entire systems incorporating numerous such cards.

The references teach nothing of such an MCM structure for a SAS expander but rather teach structures of printed circuit cards and systems incorporating a plurality of such cards. Thus, there is no suggestion or motivation in the art to produce or design a SAS expander as a single, MCM, integrated circuit component.

As noted in the earlier response, this key aspect is more than the mere integration of elements in a chip design. The internal fabric of the claimed invention provides static connections/routes among the internal ports of the various SAS expander component circuits of the MCM. The static connections/routes are static (as discussed above) in that they remain unchanged during operation of the MCM. The configuration may be determined either at time of manufacture of the MCM or based on programmable logic used when the MCM is reset (e.g., powered up or otherwise reset to a powered up state). Nothing in the prior art of record, alone or in any combination, shows such a SAS expander system/circuit design in which the couplings/routes within the MCM implemented SAS expander, once determined, remain static for the remaining period of operation of the MCM only to be changed upon a reset of the MCM (if ever changed after manufacture).

The Examiner suggests that Badamo provides such a teaching and points to Badamo element 20 of figure 3 and paragraphs 41 and 43 in support thereof. Even assuming Badamo (or any of the applied art) is properly combined, nothing in Badamo teaches that the "fabric card" (FC 20) of figure 3 provide and static routing structure following initialization of the MCM SAS expander. To the contrary, Badamo teaches that the routing through FC 20 may be altered dynamically to allow for redundant backup of one LC 22 or SC 24 by another LC 22 or SC 24. Thus FC 20 is anything but static! Rather, Badamo teaches that a control card (CC 36) of figure 3 configures the FC 20 and may reconfigure the dynamic FC 20 as required during operation of the system.

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Thus, the proposed combinations are improper since there is no suggestion or motivation to make such a combination. Further, even assuming, *arguendo*, that the proposed combinations are proper, nothing in the proposed combinations teaches the claimed features wherein the internal fabric of the MCM remains static following initialization of the MCM.

However, in hopes of advancing prosecution of this patent application, Applicants have amended independent claim 1 to incorporate all features of allowable claim 11 (including intervening claim 10) and have amended claims 17 and 18 to incorporate all features of their common base claim 15). Claims 10, 11, 15, and 16 have been canceled. Thus, Applicants assert that all remaining claims (1-9, 12-14, and 17-18) are allowable as indicated by the Examiner's allowance of claims 11-14 and 17-18. Applicants may pursue the broader protection represented by the earlier claims in a subsequent, continuing application and respectfully request reconsideration and withdrawal of the outstanding objections and rejections.

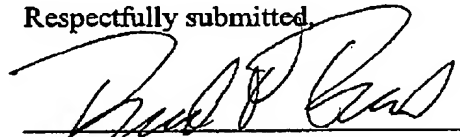
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Conclusion

Applicants have amended claims 1 and 17-18 to overcome the Examiner's rejection of various claims under §103 by incorporating features as indicated by the Examiner to obtain allowance. Claims 10, 11, 15, and 16 have been canceled with their respective recitation incorporated as required in other claims to obtain allowance. Applicants have amended claims 12-14 to correct the dependency on now canceled claims 11. Applicants may pursue broader protection in a continuing application. Applicants have addressed each issue raised by the Examiner and respectfully request reconsideration and withdrawal of all outstanding objections and rejections and passage of the application to allowance and issue.

Though a third independent claim is added by this amendment, Applicants had previously paid for three independent claims but had thus far submitted only two. Therefore Applicants believe no fees are due in this matter. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

Respectfully submitted,



Daniel N. Fishman #35,512
Duft Bornsen & Fishman, LLP
1526 Spruce Street, Suite 302
Boulder, CO 80302
(303) 786-7687
(303) 786-7691 (fax)